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108. **Proposed by F. P. MATZ, M. Sc., Ph. D., Professor of Mathematics and Astronomy, Irving College, Mechanicsburg, Pa.**

Prove that the *inclination* of a perfectly rough inclined plane must be $\theta=\sin^{-1}[e^2/(2-e^2)]$, in order that an ellipse of minimum eccentricity e may be capable of resting in equilibrium on the plane.

⁂ Solutions of these problems should be sent to B. F. Finkel not later than March 10,

AVERAGE AND PROBABILITY.

99. **Proposed by E. B. SEITZ.**

A point is taken at random in the surface of a given circle, and from it a line equal in length to the radius is drawn, so as to lie wholly in the surface of the circle. Find the chance that the line intersects in a given diameter. [No. 135, *The Analyst.*]

100. **Proposed by L. C. WALKER, Associate Professor of Mathematics, Leland Stanford Jr. University, Palo Alto, Cal.**

Required the average distance between two points in opposite sides of a regular $2n$—gon.

⁂ Solutions of these problems should be sent to B. F. Finkel not later than March 10.

MISCELLANEOUS.

100. **Proposed by F. P. MATZ, M. Sc., Ph. D., Professor of Mathematies and Astronomy, Irving College, Mechanicsburg, Pa.**

Determine the maximum value of $(\varphi-\varphi')$, if given electric currents C and C' produce deflections φ and φ' in a tangent galvanometer, so that $\tan\varphi/\tan\varphi'=C/C'$.

101. **Proposed by G. B. M. ZERR, A. M., Ph. D., Professor of Chemistry and Physics. The Temple College, Philadelphia, Pa.**

A wire is laid along the surface of a right cone semi-vertical angle β so that it cuts the generators everywhere at a constant angle θ. Find the radius of curvature and radius of torsion.

⁂ Solutions of these problems should be sent to J. M. Colaw not later than March 10.

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EDITORIAL NOTE.

The MONTHLY begins the twentieth century with eighth volume. Seven volumes are already completed, and we trust that by the coöperation of its friends it may complete many more volumes.

It is desirable to publish more papers in the future, but only such as are of real value and merit. It is not desirable to publish articles which are mere modifications of subjects treated in the ordinary text-book, but translations of important subjects from the best European writers would be of real value to many of our readers. For example, a translation of Abel's, or Wantzel's Demonstration of the Impossibility of Resolving Algebraically General Equations of a Degree Higher than the Fourth, Hermite's proof that π is transcendental, subjects that are of great interest to teachers of mathematics. Careful translations of such and other subjects will be welcomed both by readers and the editors.

Through the kindness of a very warm friend of the MONTHLY, the expense of its publication for the past year was nearly all met without drawing painfully on the editors, and we trust that all our subscribers will remain with us and support us in our effort to make the MONTHLY indispensable to all teachers of mathematics.

BOOKS.

The Elements of Analytic Geometry. By Albert L. Candy, Ph. D., Adjunct Professor of Mathematics in the University of Nebraska. 8vo. Cloth, 303 pages. Published by the Author, Lincoln, Neb.

This book has many commendable features, among which are to be noticed: The correlation of subjects; the graphic treatment of the Theory of Equations connects it with Algebra; while Chapter V and the sections on Quadrature, Maxima and Minima, introduce to the student the fundamental notions of the Calculus. Numerous exercises in the earlier chapters involving trigonometric work will refresh the student's mind on that subject. The Theory of Parameter Coordinates is briefly but clearly presented. Many historical notes are inserted. In these ways, the book marks a departure from the ordinary texts on the subject. B. F. F.

Field Manual for Engineers. By Phileteus H. Philbrick, C. E , M. S., Member American Mathematical Society, Member American Society of Civil Engineers, Chief Engineer K. C. W. & G. R. R.

The aim of this book the author says, is, 1. To present the subject of the text in a mathematical and logical order. 2. To classify all problems presented so as to be easily referred to. 3. To express the resulting formula of every problem in the form requiring the least numerical computation. 4. To furnish a large number of useful tables, more complete, more extended, and, when possible, with more elementary and appropriate argument than other similar tables. 5. To treat the general problems of railway engineering more extensively than other similar works have done. After having examined the work we believe that the author has accomplished what he aimed to do. He has written a work which is up to the demands made by the march of modern railway systems of the past twenty years. B. F. F.

ERRATA.

In Problem 153, Geometry, page 234, second line, for "the point" read *a focus*.

Page 299, line 12 from top, in denominator of $\tan^{-1}$ insert $-c^2$.

Page 302, in the notice of Prof. Nichols' Calculus, the publishers should be D. C. Heath & Co., instead of Allyn & Bacon.